



National Transportation Safety Board Aviation Accident Final Report

Location:	Bartlett, IL	Accident Number:	CEN15FA289
Date & Time:	07/03/2015, 1545 CDT	Registration:	N62681
Aircraft:	CESSNA 172P	Aircraft Damage:	Destroyed
Defining Event:	Unknown or undetermined	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The private pilot was returning from a short cross-country flight. He radioed the tower controller and reported inbound; however, he stated that he had a problem with the rudder and he wanted to "play" with it a bit. The pilot declined any assistance from the controller. About 1 1/2 minutes later, the airplane disappeared from radar, and the pilot did not respond to radio calls. The wreckage was located about 5 miles northeast of the airport in a vacant field. The airframe and rudder controls were partially fragmented on impact. The examination of the rudder controls and wreckage did not reveal any preimpact abnormalities.

During the investigation, it was noted that the pilot wore an orthopedic-type shoe with an extended spring-like heel. Due to the fragmentation of the rudder controls, the investigation was unable to determine if an object, such as the pilot's shoe, became wedged under or between the rudder pedals, which could have led the pilot to become distracted. Although diphenhydramine, a potentially impairing medication, was detected during toxicological testing, it could not be determined what effect, if any, this had on the pilot's ability to control the airplane.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's loss of airplane control for reasons that could not be determined because an examination of the airplane did not reveal any preimpact abnormalities.

Findings

Aircraft	Performance/control parameters - Not attained/maintained (Cause) Rudder control system - Not specified
Personnel issues	Aircraft control - Pilot (Cause)
Not determined	Not determined - Unknown/Not determined (Cause)

Factual Information

HISTORY OF FLIGHT

On July 3, 2015, about 1545 central daylight time, a Cessna 172 airplane, N62681, impacted terrain near Bartlett, Illinois. The airplane was destroyed and the private rated pilot was fatally injured. The airplane was registered to and operated by Fox Flying Club, Inc., under the provisions of 14 Code of Federal Regulations Part 91 as a personal flight. Visual meteorological conditions prevailed and the airplane was not on a flight plan. The local flight originated from the DuPage Airport, (DPA), West Chicago, Illinois about 1510.

The pilot was a member of the flying club, which owned the airplane. It was reported that the flight departed DPA on a flight to the Schaumburg Regional Airport (O6C), located about 8 miles northeast of DPA. During the inbound flight back to DPA, the pilot contacted the tower and reported that he had a problem with the rudder. The pilot declined any assistance. Shortly thereafter, the airplane disappeared from radar, and the pilot did not respond to further radio calls. Authorities located the accident site in a vacant field, in a forest preserve area.

PILOT INFORMATION

The pilot held a private pilot certificate with rating for airplane single-engine land. The pilot held a third class medical certificate that was issued on July 2, 2015, with the restriction; "must have available glasses for near vision". The medical certificate listed the pilot as 255 lbs., and a height of 69 inches. The pilot reported on his application for a medical certificate that he had 225 total flight hours, with 5 hours in the last six months.

AIRCRAFT INFORMATION

The Cessna 172 is a high-wing, single-engine airplane with fixed-tricycle landing gear. The airplane was powered by a four cylinder Lycoming O-320 reciprocating engine and a fixed-pitch propeller. A review of the airplane's maintenance records revealed the last annual inspection was completed on March 2, 2015, with an airframe time of 9,800.9 hours, and a tachometer reading of 3,315 hours.

METEOROLOGICAL INFORMATION

At 1552, the automated weather observation facility located at the DuPage airport, about 5 miles from the accident site recorded: wind from 300 degrees at 5 knots, 10 miles visibility, few clouds at 5,000 ft., temperature 79 degrees Fahrenheit (F), dew point 55 F, and a barometric pressure of 29.93 inches of mercury.

COMMUNICATIONS and RADAR INFORMATION

The Schaumburg Regional Airport is a non-towered airport, which utilizes a CTAF (Common Traffic Advisory Frequency) for pilot communications. The DuPage airport has an operating control tower; pilots in DuPage's airspace would communicate with the tower controller. After departing Schaumburg, the accident pilot contacted the DuPage tower controller and reported inbound; he also reported that he had a problem with the rudder, and wanted to stay out for a minute. The controller asked if he needed any assistance. The pilot stated that he "didn't think so, just let me play a little bit, here." About a minute and a half later, the controller asked the pilot his intentions, and stated that he had lost him on radar. The pilot did not respond to the radio call or additional radio calls.

A review of radar data revealed the airplane tracked in a northwest arc from Schaumburg airport; the track continued southwest towards DPA. The airplane then completed about three-quarters of a figure eight pattern, before disappearing from radar. The radar indicated that the airplane was at an altitude of about 1,900 ft. mean sea level (approximately 1,200 ft. above ground level) during the figure eight pattern.

WRECKAGE AND IMPACT INFORMATION

The on-site examination of the wreckage and ground scars were consistent with a left wing, nose down impact with terrain. The main wreckage, which consisted of both wings, the fuselage, and empennage, was located further along the wreckage path. Numerous pieces had separated from the airplane and were scattered, but remained near the wreckage site. The cabin area was largely destroyed; both wings remained with the fuselage and the leading edge of the right wing displayed impact damage. Both wing fuel tanks were breached and torn open. The empennage remained attached to the fuselage with impact damage to the vertical and horizontal stabilizers. There was not a post-crash fire.

The engine had separated from the fuselage and was just beyond the main impact crater. The fixed pitch, 2-bladed propeller remained attached to the engine's crankshaft flange. One blade was twisted and curled past 90 degrees, back towards the hub; the other blade was slightly twisted and bent; largely on the outboard section.

The rudder control cables were found connected to the rudder horn; the cables continued forward to the forward cabin. The rudder cables had separated from the rudder/brake control assembly; the cable breaks were consistent with the overload due to the accident. The rudder/brake assembly was not intact, and several pieces/components of it were found along the wreckage path. Control continuity for the elevators was established to the forward cabin.

Aileron continuity was established to each of the wing bellcranks, both cables had separated at the wing roots, consistent with overload.

The flap actuator measured about 1/4 inch, which corresponds to a flaps retracted position.

The engine was retrieved and transported to a hangar facility for further examination.

The engine had sustained extensive impact damage. The engine was rotated by hand; continuity was established to the accessory section of the engine and through the valve train; a thumb compression test confirmed compression and suction in each cylinder. The carburetor had separated and was broken open, the starter was broken and had separated from the engine. The left magneto remained with the engine, but was shattered; the right magneto was able to produced spark on each terminal.

The sparkplugs exhibited light colored combustion deposits, except the number four-bottom sparkplug, which was oil soaked. The electrodes exhibited normal signatures, in accordance with the Champion aviation check-a-plug chart.

No pre-impact abnormalities were noted during the airframe or engine examinations.

Two shoes were located at the accident site that the pilot reportedly wore. The shoes were an orthopedic type, designed to reduce foot, leg, and back pain. The shoes incorporate a coil type spring in the heel of the shoe (photograph of the shoes are in the docket for this case).

MEDICAL AND PATHOLOGICAL INFORMATION

The Office of the Coroner, DuPage County, Illinois conducted an autopsy on the pilot. The cause of death was determined to be, "multiple traumatic injuries".

The FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, conducted toxicological testing on the pilot. The specimens were marked as putrefied and were not tested for carbon monoxide or cyanide. The test was positive for ethanol (27 mg/dL) in muscle, no ethanol detected in the brain. The ethanol is likely from a source other than ingestion.

The test detected Atenolol, Colchicine, Diphenhydramine, and Losartan kidney and liver.

Atenolol- Prescription medication is generally used alone or in combination with other medications to treat high blood pressure.

Colchicine - Prescription medication used to prevent gout attacks in adults, and to relieve relief for gout attacks.

Diphenhydramine (marketed under several brand names, such as: Benadryl, Sominex, Advil PM), is an over-the-counter antihistamine used to treat allergic conditions and as a sleep aid.

Losartan - Prescription medication used primarily for the treatment of high blood pressure. It may also have secondary uses to reduce the risk of stroke in patients with hypertension, an enlarged heart, and for the treatment of diabetic kidney damage.

History of Flight

Enroute	Unknown or undetermined (Defining event) Loss of control in flight
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Pilot Information

Certificate:	Private	Age:	61
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 With Waivers/Limitations	Last FAA Medical Exam:	07/02/2015
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	225 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	Registration:	N62681
Model/Series:	172P	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	17275323
Landing Gear Type:	Tricycle	Seats:	
Date/Type of Last Inspection:	03/02/2015, Annual	Certified Max Gross Wt.:	2299 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	9800.9 Hours	Engine Manufacturer:	LYCOMING
ELT:	C91 installed, not activated	Engine Model/Series:	O-320 SERIES
Registered Owner:	FOX FLYING CLUB INC	Rated Power:	160 hp
Operator:	FOX FLYING CLUB INC	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KDPA, 758 ft msl	Distance from Accident Site:	5 Nautical Miles
Observation Time:	1552 CDT	Direction from Accident Site:	47°
Lowest Cloud Condition:	Few / 5000 ft agl	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	300°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.93 inches Hg	Temperature/Dew Point:	26° C / 13° C
Precipitation and Obscuration:			
Departure Point:	Schaumburg, ID (06C)	Type of Flight Plan Filed:	None
Destination:	Dupage, IL (DPA)	Type of Clearance:	VFR
Departure Time:		Type of Airspace:	

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	41.962500, -88.168611 (est)

Administrative Information

Investigator In Charge (IIC):	Craig Hatch	Report Date:	04/14/2016
Additional Participating Persons:	Allen Pattenau; FAA FSDO; Dupage, IL Ernest Hall; Textron Aviation; Wichita, KS Mike Childers; Lycoming Engines; White, GA		
Publish Date:	04/14/2016		
Note:	The NTSB traveled to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=91488		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).